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T.B.

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/339,869 06/25/99 KOIDE

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005514 QM22/0509  
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NEW YORK NY 10112

EXAMINER

TUGBANG, D

ART UNIT

PAPER NUMBER

3729

DATE MAILED:

05/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

**Office Action Summary**

Application No.

09/339,869

Applicant(s)

KOIDE ET AL.

Examiner

Dexter Tugbang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2001.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 16-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. The Applicant(s) Amendment filed 2/26/01 (in Paper No. 9) has been fully considered and made of record.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Election/Restriction*

3. Claims 4 and 16-31 stand as being withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

### *Claim Rejections - 35 USC § 102*

4. Claims 1-3, 6-10 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishiwaki et al 5,263,250 (2nd reference on Applicants' IDS, Paper No. 7, dated 8/7/00).

Nishiwaki discloses the claimed processing method comprising: closely contacting a mask plate 8 having at least one opening 8a corresponding to at least one discharge port (nozzles) of a discharge port plate (nozzle plate) of an ink jet head; and forming the discharge port by irradiating plural high energy ultraviolet parallel beams simultaneously through the mask plate (see Figures 2 and 3). The claimed "vertical axis" of the mask plate is broadly read as

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horizontal optical axis 3' and the X-axis (arrow shown in Figures 2 or 3) is read as the claimed "arrangement direction" of the discharge port.

With regards to Claims 2, 3, 8, 9, and 10, the symmetry of incident beams (shown in Figure 2) clearly indicates that the incident beams are symmetrical, have the same angle, and are equally divided with respect to the optical axis 3'. Further regarding Claims 3 and 9, Nishiwaki additionally teaches a division of beams in a "circumference of a circle" as indicated by Figure 4 (discussed at col. 5, lines 1-11).

With regards to Claim 7, Nishiwaki discusses bonding the discharge port plate to the ink jet main body at col. 6, lines 64+.

With regards to Claim 15, Nishiwaki further discussed the concept of the excimer laser at col. 3, line 13+.

### ***Claim Rejections - 35 USC § 103***

5. Claims 5, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiwaki et al.

With regards to Claims 5 and 11, to choose any desired specific angle of irradiation of the incident beams in relationship to the arrangement direction of the discharge port is an obvious matter of design choice, since the Applicants have not disclosed that the claimed *angle of 45 °* solves any stated problem or is for any particular purpose, and it appears that the invention would perform equally well with the various angles of incident beams taught by Nishiwaki.

With regards to Claim 12, the rectangular section of the ink jet head is read as member 12 (in Fig. 3) of Nishiwaki, to be processed by the incident beams.

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6. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiwaki et al in view of Muto 5,548,894.

Nishiwaki discloses the claimed processing method as previously discussed. Nishiwaki does not teach that the discharge port plate is formed of either resin or silicon nitride material.

Muto teaches that forming discharge port plates (nozzle plate 61) can be accomplished by conventional materials of either resin or silicon nitride (see col. 25, line 55 to col. 26, line 16) and it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed the discharge port plate of Nishiwaki with such a conventional material of either a resin or silicon nitride.

#### *Response to Arguments*

7. Applicant's arguments filed 2/26/01 have been fully considered but have not been deemed to found as persuasive.

With respect to the merits of Nishiwaki et al, the Applicants argue the Nishiwaki does not teach; 1) that the discharge port widens in a direction away from a source of the beams, and 2) forming the ports from the discharge side of the nozzle plate.

The Examiner's position referring to the "wherein..." clauses recited in the last two lines of each of Claims 1 and 6, are that these recitations are very broad and relative terms. It is clear that the intent of Nishiwaki is to form discharge ports, i.e. holes, in a nozzle plate with a laser. The nozzle plate would initially start out as a solid blank with no holes in the plate itself. When the laser beams act on the nozzle plate to form the discharge ports, the laser would clearly ablate material to form these discharge ports. The removal of the nozzle plate material would start at

one side of the nozzle plate where the laser would initially contact the plate. And the removal of material would end when the laser reaches the other side of the nozzle plate such that a hole is formed to make up a discharge port. The direction of ablated material from one side of the nozzle plate to the other side of the nozzle plate is said to form a hole or discharge port what widens “in a direction away from the source of the beams”. Therefore, Nishiwaki fully meets the limitations recited by the “wherein...” clauses at the last two lines of Claims 1 and 6.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., forming the discharge ports from the discharge side of the nozzle plate) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### ***Conclusion***

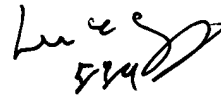
8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dexter Tugbang whose telephone number is (703) 308-7599.



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adt

May 8, 2001